

*Indo-European Linguistics in the 21<sup>st</sup> Century (1)*

**From trilaringealism to monolaringealism:  
returning to Oswald Szemerényi**

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**ABSTRACT:** By the present day only a handful of models are left to compete for a solution concerning the reconstruction of the Proto-Indo-European (PIE) laryngeal and vowel system. The remaining hybrid versions of the laryngeal theory, as proposed by EICHNER, MELCHERT, KORTLANDT, and RIX, explain the Indo-European (IE) vocalisms with *both* the laryngeals \*h<sub>1</sub> \*h<sub>2</sub> \*h<sub>3</sub> and at least two of the proto-vowels \*e \*o \*a. Due to this dual fixation these models are inherently ambiguous, as in principle every IE vocalism can be explained with *both* a laryngeal and the respective vowel. This means that the laryngeal theory is ultimately incapable of solving the PIE laryngeal and vowel problem, and the only way out is a radical simplification of the framework. A simplification was first proposed by Oswald SZEMERÉNYI, who reconstructed a single glottal fricative PIE \*h = Hitt. ḫ, accompanied by a near equivalent of the Neogrammarian vowel system \*a e o ā ē ō ǎ ǝ. Despite the need for additional work on a number of key problems, monolaringealism, as proposed by him, remains the only realistic option for Indo-European linguistics in the 21<sup>st</sup> century.

**1. General introduction to the laryngeal theory (LT)**

1.0 The laryngeal theory, dominant in Indo-European linguistics of the 20<sup>th</sup> century, can be historically divided into the *pioneering*, *classical*, and *post-classical* (or *hybrid*) phases.<sup>1</sup>

1.1 The *pioneering phase* (1878-1926) began with initial ideas of Ferdinand de SAUSSURE (1878) that were developed into the LT proper by Hermann MØLLER (1879, 1880, 1906, 1911).<sup>2</sup> According to MØLLER's original formulation of the theory:

- (a) PIE had three laryngeals \*E A O (= \*h<sub>1</sub> h<sub>2</sub> h<sub>3</sub>).<sup>3</sup>
- (b) PIE had a single vowel \*e.<sup>4</sup>
- (c) PIE roots were of the form CeC·C.<sup>5</sup>

1.2 The *classical phase* (1927-1970s) began with the attempts of Jerzy KURYŁOWICZ

<sup>1</sup> For a summary of the laryngeal theory and the details of the hybrid models of EICHNER, MELCHERT, and KORTLANDT and terminology used here, see PYYSSALO 2016, which this paper supplements.

<sup>2</sup> Albert CUNY's (1912) contribution is limited to the assumption of a vocalic counterpart for \*A and his analysis of some examples of Neogr. Dh as D+A. For an evaluation of CUNY's work, see SZEMERÉNYI (1973: 12f.).

<sup>3</sup> MØLLER (1879: 151n1): "Saussure stellt ausser dem A noch ein zweites wurzelhaftes element derselben art auf für wurzeln wie stufe 1 und 2 δω-, stufe °δo-, und er hätte für wurzeln wie stufe 1 θη- germ. *dē-*, 2 germ. *dō-*, °θε- skr. *hi-* lat. a in *ratus, satus* (s. 140ff.) nach meiner ansicht noch ein drittes aufstellen sollen. Diese wurzelhaften elementen werden als consonantische (A die tönende, E die tonlose kehlkopfspirans?, O das kehlkopf-r?) aufzufassen sein."

<sup>4</sup> For the 'monovocalism hypothesis', see MØLLER (1911: xiv): "Es gibt im Indogermanischen nur *a*-Wurzeln (oder, wenn man fürs Indogermanische lieber will, *e*-Wurzeln, was für die Sache dasselbe), den semitischen *a*-Wurzeln entsprechend."

<sup>5</sup> See MØLLER (1879: 492): "Die ursprüngliche gestalt der indogermanischen wurzel, d. h. natürlich des indogermanischen wortes, genauer nomens war die: die wurzel war zweisilbig mit innerem vocal a und auslautendem vocal a, nach den consonanten biliteral wie B'aRa (träger) oder trilateral (mit innerem i, u, r oder nasal cons., oder A, E) vor oder nach cons.) wie DaRCa (blickend), VaDa (sehend), DaIVa und DIaVa (glänzend, himmel), DaMAa (bändigend)."

(1927, 1935) and Émile BENVENISTE (1935) to make MØLLER's laryngeal theory fit the data of the Old Anatolian languages: Hittite, Palaic, Cuneiform Luwian, and Hieroglyphic Luwian. The classical phase brought forth the first internal split between the supporters of the theory: While BENVENISTE continued MØLLER's *orthodox* monovocalism hypothesis, KURYŁOWICZ proposed the first *revisionist* theory, i.e. one having at least two, but nowadays often three, distinct original vowel qualities belonging to the set PIE  $*e \neq *o \neq *a$ . The classical period was dominated by the *orthodox* approach, which, however, in conjunction with the Hittite data led to an ever-increasing postulation of laryngeals.<sup>6</sup> In its maximal form, this development culminated in the six items defined by Jaan Puhvel in 1965.<sup>7</sup>

1.3 The *post-classical* phase (from the 1970s on) is characterized by a shift from the orthodox explanation of the IE vowel qualities exclusively by means of the laryngeals to the revisionist theory, assuming at least two, but possibly three vowels from the set  $*e \neq *o \neq *a$ .<sup>8</sup> As the revisionist theories explain the IE vocalisms *both* with the colouring rules (or allophony) *and* original vowels, all remaining models of the LT can be called *hybrids*, i.e. their reconstruction of the IE vowels is based partly on the laryngeal theory in its original form à la MØLLER, partly on the Neogrammarian vowel system.<sup>9</sup>

## 2. The models of the post-classical (hybrid) laryngeal theory

2.0 By 2017 there are four hybrid theories, best known through the authors Heiner EICHNER, H. Craig MELCHERT, Frederik KORTLANDT, and Helmut RIX. As these models exhaust the mathematical possibilities available regarding the distributions of lost and preserved laryngeals and the reconstructed vowels  $*a e o$ , no new models will emerge in the future.

A key question in the hybrid theories is the reconstructive interpretation of initial OAnat. *a-* (= Hitt. *a-*, Pal. *a-*, CLu. *a-*, HLu. *a-*) and the assumed loss or preservation of initial  $*h_3-$  in Old Anatolian. From these starting points the main models of hybrid trilaryngealism can be characterized as follows:<sup>10</sup>

2.1 According to the ‘*\*e*-hybrid theory’ (eLT), first presented by Heiner EICHNER (1973, 1978, 1980, 1988) and supported by e.g. Norbert OETTINGER in 1979,  $*h_3-$  is

<sup>6</sup> The addition of the laryngeals took place because the Old Anatolian and Indo-European data actually revealed far more correspondence sets than Møller's theory could cope with by means of three laryngeals and a single vowel PIE  $*e$ .

<sup>7</sup> Puhvel postulates two sets of laryngeals à la Møller, one ( $*E, A, O$ ) for items preserved and another ( $*h_1, h_2, h_3$ ) for items lost in Old Anatolian. An unofficial record of assumed laryngeals, thirteen, was made by André Martinet in 1986: 146.

<sup>8</sup> From the point of view of research history it was Szemerényi who in his comment noting the impossibility of the monovocalism hypothesis in the face of examples of Hitt. *a-* pushed the laryngeal theory from the classical phase into the hybrid phase, writing (1970: 146): “Es gibt aber auch Gleichungen, in denen das Heth. einem *a-* oder *o-* der anderen Sprachen kein *ha-* gegenüberstellt (...). Mit drei Laryngalen kann man solche Fälle nicht erklären.”

<sup>9</sup> In essence the hybrid theories postulate vowels independently of the items that emerged from the colouring effect of  $*h_2$  and  $*h_3$  (or allophony in the environments  $+[h_2]$  and  $+[h_3]$ ), thus matching the respective items in the Neogrammarian phoneme inventory.

<sup>10</sup> The distributional theory of Frederik Kortlandt (1984, 2004), recently adopted by Alwin Kloekhorst (2007), is omitted in this paper, since it contains all the problems of the other theories, to which it adds an unfeasible distribution of both  $*h_2$  and  $*h_3$  being lost before  $*o$ , but preserved before  $*e$  (for details and criticism, see Pyysalo 2016: §2.3).

lost in initial position in Old Anatolian and the problematic Old Anatolian initial is to be reconstructed as Hitt. a- ← \*h<sub>3</sub>e-.<sup>11</sup>

2.2 According to the ‘\*o-hybrid theory’ (oLT) simultaneously presented by H. Craig MELCHERT (1987, 1994) and Sara KIMBALL (1987, 1999), \*h<sub>3</sub>- is preserved in Old Anatolian (= Hitt. ḫa-). According to this view the Old Anatolian initial is to be reconstructed as Hitt. a- ← \*h<sub>1</sub>o-.<sup>12</sup>

2.3 According to the ‘\*a-hybrid theory’ (aLT), first presented by RIX et al. (1998, 2001), \*h<sub>3</sub>- = Hitt. ḫ- is preserved in initial position in Old Anatolian as in MELCHERT’s oLT.<sup>13</sup> The model differs from MELCHERT’s in assuming a vowel \*a, which is used to reconstruct the Old Anatolian initial Hitt. a- ← \*h<sub>1</sub>a-.<sup>14</sup> This enables the model to maintain the idea of initially preserved \*h<sub>3</sub>- in Old Anatolian without postulating PIE \*o as in MELCHERT’s \*h<sub>1</sub>o-.<sup>15</sup> As this model was not included in PYYSALO 2016, it will be reviewed in detail below.

2.3.1 The clear advantage of the aLT is its recognition of two unsolved key problems of the classical laryngeal theory, viz.

(a) The problem of the vowel \*a in the cases where \*h<sub>2</sub>e cannot be postulated, neglected or denied against the facts in the entire laryngeal theory until now.<sup>16</sup> A straightforward solution is proposed through the simple assumption of an independent vowel \*a postulated for problematic correspondences.<sup>17</sup>

(b) The existence of the ablaut IE /e/ : /a/, which occurs in a restricted but securely established set of correspondences.<sup>18</sup>

It is encouraging that these problems are finally admitted and an attempt to solve them has been made. However, one should also note the high cost of the theory, manifest in the far-reaching consequences of the assumption of both PIE \*a, PIE \*h<sub>2</sub>, and the ablaut PIE \*e : \*a : Ø.

<sup>11</sup> For a detailed account of EICHNER’s theory, see PYYSALO 2016: §2.2.

<sup>12</sup> For a detailed account of MELCHERT’s theory, see PYYSALO 2016: §2.1.

<sup>13</sup> Strictly speaking the colouring rules are not assumed in the aLT, but rather the vowel PIE \*e (pre-PIE \*\*á) is understood as having the allophones /e a o/ in the environments of \*h<sub>1</sub> h<sub>2</sub> h<sub>3</sub>. In Martin KÜMMEL’s (2012: 313) words: “There are good independent reasons to suspect that conventional PIE \*e reflects an original /a/. As far as we know, it had three basic allophones, two non-front vowels in the neighbourhood of certain back fricatives (i.e., \*h<sub>2</sub> and \*h<sub>3</sub>) and a front vowel elsewhere. This is similar to the allophony that we find in Semitic systems with just one non-high short vowel: e.g., Arabic /a/ and /ā/ are very often fronted in many varieties, except when adjacent to uvulars, pharyngeals and/or pharyngealized consonants where they may be retracted (cf. Kaye & Rosenhouse 1997: 278).”

<sup>14</sup> In LIV<sup>2</sup>: 229 the editor M.K. (Martin KÜMMEL) postulates two roots with the vowel PIE \*a. In the second of these, <sup>2</sup>\*h<sub>1</sub>ai-, a stem Hitt. ai- is reconstructed as PIE \*h<sub>1</sub>ai- (i.e. with a vowel PIE \*a not emerging from the colouring effect of \*h<sub>2</sub>).

<sup>15</sup> For the examples of initial aLT \*h<sub>3</sub>-, see LIV<sup>2</sup>: 296-308.

<sup>16</sup> See e.g. Alexander LUBOTSKY’s (1989) article *Against a PIE phoneme \*a*.

<sup>17</sup> For a strong assessment of the well-known situation, see POOTH (2016: 9): “Alle bisherigen und wohl alle noch erdenklichen Einwände diesbezüglich basieren auf m.E. eher unplausiblen spekulativen Vorkonzeptionen (z.B. die, dass das Uridg. aus noch unbegründeten Gründen kein \*a (...) gehabt haben dürfte oder dass es in natürlicher Sprache keine formale und funktionale Varianten geben dürfte usw.)”

<sup>18</sup> For this, see POOTH’s statement (2016: 9): “(...) prinzipiell immer noch (...) überhaupt nichts gegen den Ansatz \*h<sub>1</sub>lar- mit \*a (neben \*h<sub>1</sub>ler-) spricht (...)”. For an example of the ablaut IE /e/ : /a/, see e.g. Att. ἐρωή- (f.) ‘Ruhe’ (IEW 338-339) and Hes. ἄραμεν: μένειν’ (LSJ. 233).

2.3.2 Ever since de SAUSSURE (1878), the explanation of the IE ‘a-vocalism’ (Neogr. \*ə a ā) with \*A (\*h<sub>2</sub>) has been one of the cornerstones of the classical laryngeal theory. The assumption of an independent vowel PIE \*a as a parallel explanation for the IE ‘a-vocalism’ turns all reconstructions with \*h<sub>2</sub> ambiguous – should there not be an Old Anatolian parallel available – as shown in the equations:

$$\text{IE } a = *h_2e \vee *h_1a \qquad \text{IE } \bar{a} = *eh_2 \vee *ah_1.$$

In practice, the entire correspondence set for \*h<sub>2</sub> as far as reconstructed until now dissolves, because the established connection between \*h<sub>2</sub> and the IE ‘a-vocalism’ is lost.<sup>19</sup> As this correlation is no doubt the most important result in the entire laryngeal theory, the assumption pits the \*a-hybrid theory against the entire history of the theory. The latter preserves an edge over the aLT due to its correct observation of the ‘coefficient \*A’ – whatever its reconstructive interpretation – being the cause of the ‘a-colouring’ of the cognates preserving this feature. In the absence of this connection the aLT, like monolaryngealism, does not perform as well as the classical theory.

2.3.3 In connection with \*h<sub>1</sub> the ablaut PIE \*e : \*a results in the patterns

$$*h_1e : *h_1a \qquad *eh_1 : *ah_1.$$

As the assumed outcomes of \*h<sub>1</sub>a and \*ah<sub>1</sub> are identical with those of \*h<sub>2</sub>e and \*eh<sub>2</sub>, the aLT risks creating general confusion between roots with \*h<sub>1</sub> and \*h<sub>2</sub>. From the point of view of etymology (and lexicology) this will result in a forced return to a reconstruction resembling IEW (POKORNY’S IEW (1959), as the distinction brought by the connection of \*h<sub>2</sub> (= Hitt. ḫ) and the IE ‘a-colouring’ is no longer available.<sup>20</sup> Keeping this in mind, the hybrids of EICHNER and MELCHERT and the classical laryngeal theory as a whole remain a safer bet.

2.3.4 LIV<sup>2</sup>, like MELCHERT’S model, assumes the preservation of initial \*h<sub>3</sub>-. However, as pointed out by EICHNER, all examples of initial Hitt. ḫa-, allegedly from \*h<sub>3</sub>e-, can stand for \*h<sub>2</sub>o-.<sup>21</sup> As the actual data confirm EICHNER’S interpretation (see PYYSALO 2016: §2.1.2), the assumption of preserved \*h<sub>3</sub>e- is unwarranted and the theory should – as that of MELCHERT – be improved and we should reconstruct \*h<sub>2</sub>o- instead of †h<sub>3</sub>e-.

2.3.5 Instead of offering a real solution the aLT increases the already existing ambiguities, because it adds yet a third possible interpretation of Hitt. a- to the two previously existing ones. Consequently any of the three options

<sup>19</sup> For an example of the resulting ambiguities, see, for instance, the entry \*h<sub>2</sub>ejd<sup>h</sup>- ‘entzündend’ (LIV<sup>2</sup>: 259 n1), where the editor M.K. notes: “Ein Ansatz mit \*h<sub>1</sub>a<sup>o</sup> würde nur durch wurzelanatomische Verbindung mit anatolisch \*aj- ‘warm sein’ (s. 2. h<sub>1</sub>aj-) gefordert, bleibt aber möglich;”.

<sup>20</sup> For an example of such confusion in practice, see POOTH 2016, in which the author proposes to combine the data of a handful of unrelated PIE roots under a single item, in part facilitated by the assumption of a root with h<sub>1</sub> and ablaut \*e/a. The distinction between the qualities IE /e/ and IE /a/, reflected at least in some degree in all languages except Indo-Iranian, offers important clues about PIE \*h = \*ḫ and should not be lightly dismissed.

<sup>21</sup> EICHNER (1978: 162<sup>77</sup>): “Von den in der Literatur für anatol. h- < h<sub>3</sub>- genannten Beispielen ist keines sicher, alle können auch mit \*h<sub>2</sub>- angesetzt werden (Material bei F. O. Lindeman, Einführung in die Laryngaltheorie, Berlin 1970, § 27). Hingegen ist die Vertretung von \*h<sub>3</sub>- durch anatol. Ø- wegen heth. artari ‘steht’ (Wurzel \*H3er, s. H. Rix MSS 27, 1969, 92f.) m.E. gesichert.”

Hitt. a-            \*h<sub>3</sub>e- (EICHNER) ~ \*h<sub>1</sub>o- (MELCHERT) ~ \*h<sub>1</sub>a- (RIX)

can now be arbitrarily chosen in the revisionist laryngeal theory, exclusively depending on which of the hybrids one chooses as a starting point.

### 3. Evaluation of the hybrid models and the laryngeal theory as a whole

3.0. From the outset the laryngeal theory was an attempt by Hermann MØLLER to explain the Indo-European vocalisms by means of laryngeals in order to make a match between the (pre-)PIE laryngeals and their alleged Semitic counterparts.<sup>22</sup> After the appearance of Hittite, the orthodox theory, dominating after the publication of BENVENISTE 1935, resulted in an exponential growth of the number of assumed laryngeals. The inconsistency with typology and the IE ablaut patterns<sup>23</sup> led to the general abandonment of this model by the 1980s and the respective rise of the hybrid models.

3.1 By the end of the 20<sup>th</sup> century the appearance of LIV in 1998 (and LIV<sup>2</sup> in 2001) in essence meant that the hybrid models had also reached their zenith. LIV<sup>2</sup> presents the third and last possibility, \*a, for the interpretation of the proto-vowel corresponding to the initial Hitt. a-:

- (a) EICHNER's model opted for the 'e-quality' vowel (Hitt. a- = \*h<sub>3</sub>e-).
- (b) MELCHERT's model opted for the 'o-quality' vowel (Hitt. a- = \*h<sub>1</sub>o-).
- (c) RIX's model opted for the 'a-quality' vowel (Hitt. a- = \*h<sub>1</sub>a-).

The stock of available vowels (PIE \*e ≠ \*o ≠ \*a) has thereby been exhausted, and a final assessment of the laryngeal theory, only existing in the form of these models, now presented in the standard textbooks as a single theory with three laryngeals and two or three vowels,<sup>24</sup> can therefore be securely presented.

3.2 Despite occasionally performing better than its orthodox predecessors, the revisionist theory has an even more serious problem than any of them: the hybrid nature of the models. The twofold explanation of the IE vowel qualities, by means of both laryngeals and vowels, means unsolvable ambiguity by definition, and the more vowels are assumed, the more serious the ambiguities become. In addition, as the hybrid theories disagree on the preservation of \*h<sub>3</sub>-, the number of alternative reconstructions is multiplied. From the outset there are three possible main alternatives for the reconstruction of initial Hitt. a-, viz.

<sup>22</sup> As mentioned by Koerner (1985: 336), “[Möller’s] 94-page monograph on the laryngeal consonants of Indo-European and Semitic was not regarded as sound in scholarship”, and it was immediately rejected due to its non-genetic basis. Similarly, Krahe (1958: 97) wrote: “‘Die ‘Laryngaltheorie’ kann aber weder in ihrer Substanz noch in ihrer Methodik als gesichert gelten” in reference to the root shape CeC·C and the laryngeals \*h<sub>1</sub> h<sub>2</sub> h<sub>3</sub> and the procedure of replacing the Indo-European vocal qualities and quantities with these.

<sup>23</sup> For an inconsistency with ablaut in PUHVEL's theory, see e.g. Hitt. arḫa- (c.) 'Grenze, Gebiet' (HEG I: 55): MidIr. or- (m.\*o) 'edge, limit' (LEIA O: 26), Corn. or- (n.f.) 'boundary, border, frontier' (EtDiPC 137), and OLith. ara·ki- (m.) 'Grenzstein, Grenze' (ALiEtWb. A-45, LiEtWb. 121f.). In PUHVEL's theory this would require \*Oerh<sub>x</sub>o-. However, the respective \*e-grade in Hitt. erḫa- (c.) 'Grenze, Gebiet : border, area' (HHand. 62 ir-ḫa), HLu. erḫa- (sb.) 'frontier' (CHLu. 1.1.19, ("FINES"))i+r<sup>3</sup>/i-há-za): Lith. ere·kỹ- (m.) 'Grenzstein, Grenze' (ALiEtWb. A-45) requires \*Eerh<sub>x</sub>e/o-, leading to inconsistency due to two separate laryngeals being required for a single root.

<sup>24</sup> For some recent textbooks with at least two distinct vowels, see MEIER-BRÜGGER (2003), FORTSON (2004), and CLACKSON (2007).

Hitt. a-            \*h<sub>3</sub>e- (EICHNER)            \*h<sub>1</sub>o- (MELCHERT)            \*h<sub>1</sub>a- (RIX).

However, if we also observe KORTLANDT's proposal, having distributionally preserved \*h<sub>2</sub> and \*h<sub>3</sub> in \*h<sub>2</sub>e- and \*h<sub>3</sub>e- in Old Anatolian and respectively lost them in \*h<sub>2</sub>o- and \*h<sub>3</sub>o-, also \*h<sub>2</sub>o- and \*h<sub>3</sub>o- are possible. Finally, it would be possible to reconstruct \*h<sub>3</sub>a- in a theory assuming PIE \*a. In sum, the revisionist theory allows a whole of six different reconstructions for Hitt. a-:

Hitt. a-            =            \*h<sub>3</sub>e- V \*h<sub>1</sub>o- V \*h<sub>1</sub>a- V \*h<sub>2</sub>o- V \*h<sub>3</sub>o- V \*h<sub>3</sub>a-.

Thus, exactly as the orthodox theory fell to the exponential increase of laryngeals, the revisionist theory fails due to the ambiguities caused by exponential increase of equally possible clusters of vowels and laryngeals.<sup>25</sup>

3.3 The ambiguity problem is aggravated by the fact that most of the laryngeals and vowels reconstructed in the hybrid models are not strictly based on the data, but lean on inconsistent initial assumptions concerning the PIE root shape, the laryngeals, and the PIE vowel system. The hybrid theories have two fundamental problems:

3.3.1 The simultaneous explanation of the IE vowel qualities with *both* laryngeals *and* original vowels automatically leads to unsolvable and cumulative ambiguities.

3.3.2 The laryngeals, except for \*h<sub>2</sub> (≈ Hitt. ḫ ≈ Neogr. \*ṛ a ā), are not postulated on the basis of the data, but derived from the assumption that the PIE roots began with a consonant C- as implied by the unwarranted root hypothesis CeC·C (see §1.2.c.). This is why the material does not contain a scientific standard to decide between the alternatives.<sup>26</sup>

3.3.3 As a result the revisionist theory (i.e. the hybrid laryngeal models) is in an endless loop implying multiple mutually contradicting reconstructions, and the scholars of the field are supposed to take a leap of faith in choosing between the alternatives without a standard of proof, making the reconstruction arbitrary and ultimately meaningless. In other words, also the revisionist laryngeal theory has failed, just as its orthodox counterpart did a generation earlier.

3.3.4 The exponential growth of the number of laryngeals in the orthodox theories and the similar exponential growth of ambiguities in the revisionist theories are only symptoms of the real problem: The proposed solutions are not entirely based on the data. This *the emperor has no clothes* -situation is caused by the very hypotheses of MØLLER's theory, especially the laryngeals \*h<sub>1</sub> h<sub>3</sub>, the root hypothesis CeC·C, and the attempt to explain the Indo-European vocalisms with laryngeals.

<sup>25</sup> Due to the exponential ambiguities even the earlier orthodox theory of PUHVEL 1965 (with only \*Ae or \*Oe-) performs better than its revisionist counterpart.

<sup>26</sup> The ambiguity is not restricted to Old Anatolian, but is an overall property of the revisionist theory. As the 'laryngeals' are lost in the rest of the family, their absence makes the ambiguities even worse in the non-Anatolian correspondence sets. Thus, for example, the Pokorny-root IEW 402 1. gol- 'liegen; Lager, Tierlager' (\*gōl- \*gol-) is characterized by the forms Gr. γωλεό- (m.) 'Höhle, Schlucht' (GEW 1: 336, γωλεός) and Arm. kałal- (sb.) 'Höhle, Schlupfwinkel' (GEW 1: 336). In the orthodox models this would have had to be reconstructed as PIE \*geh<sub>3</sub>l- (zero grade: \*gh<sub>3</sub>l-) but in the revisionist models a vast array of insolvable ambiguities results: PIE \*goh<sub>1</sub>l- V \*goh<sub>2</sub>l- V \*goh<sub>3</sub>l- V \*gah<sub>3</sub>l- V \*geh<sub>3</sub>l- (zero grade: \*gh<sub>1</sub>l- V \*gh<sub>2</sub>l- V \*gh<sub>3</sub>l-). Since in addition the vowels Gr. ω and Arm. a can reflect respective PIE items having no relation to laryngeals, this further extends the ambiguity.

3.4 As the revisionist theory was a final attempt to save trilaryngealism, the entire laryngeal theory as a functional model has lost its validity. Since a new functional theory, securing a scientific reconstruction model corresponding to the actual data, is urgently required, all eyes are turned to the last candidate in the competition, the so-called monolaryngealist model.<sup>27</sup>

#### 4. From trilaryngealism back to monolaryngealism

4.0 The downfall of the laryngeal theory should not come as a surprise, as MØLLER's laryngeal theory (1880) predates the discovery of Hittite and was formulated with another motive than describing the IE languages (or PIE), namely to prove a genetic relationship between Indo-European and Semitic by assuming Proto-Indo-Semitic as their common ancestor. Despite the later adjustments brought forth by the laryngeal theory proper, all models share the assumptions \*h<sub>1</sub> h<sub>3</sub> and CeC·C, provably leading to inconsistency with the Indo-European data, including Old Anatolian, regardless of whether more laryngeals and/or vowels are assumed than in MØLLER's original theory. The conclusions were drawn by Johann TISCHLER a generation ago:<sup>28</sup> The only way out is to scale down the inconsistent assumptions, the laryngeals \*h<sub>1</sub> \*h<sub>3</sub>, the colouring effect (or allophony), and the root hypothesis CeC·C, and to adopt the view of a single PIE 'laryngeal' equaling Hitt. ḫ.

4.1 The theory that PIE only had a single 'laryngeal' \*H without colouring effect was first proposed by Ladislav ZGUSTA in 1951<sup>29</sup> on the basis of comparison of Hitt. ḫ in the correspondences. Following ZGUSTA all models of the theory from SZEMERÉNYI to the most recent version (PYYSALO 2013) use only vowels to explain the IE vocalisms and are thus free from the problems that have led to the fall of the laryngeal theory.<sup>30</sup>

4.2 From the late 1960s on Oswald SZEMERÉNYI (SZ) developed ZGUSTA's initial proposal to better match the realities of the Indo-European data. The name *monolaryngealism* was coined for this approach by EICHNER (1988: 128). After SZEMERÉNYI's improvements classical monolaryngealism had the following key properties:

4.2.1 SZEMERÉNYI (1996: 140) interpreted ZGUSTA's segmental laryngeal \*H = Hitt. ḫ phonetically as a glottal fricative PIE \*h (= IPA /h/) on the basis of its co-occurrence

<sup>27</sup> See EICHNER (1988: 124): "Hinsichtlich der **Anzahl** der postulierten urindogermanisch-grundsprachlichen Laryngale läßt sich beobachten, daß gegenwärtig nur noch zwei Konzeptionen von einem jeweils größeren Zahl gut unterrichteter Forscher vertreten werden, nämlich der Monolaryngalismus (ein Laryngal) und der Trilaryngalismus (drei Laryngale)."

<sup>28</sup> See TISCHLER (1980: 509): "Da es ein Ziel wissenschaftlicher Forschung sein muß, möglichst einfache Theorien zu erstellen [...] sollte man die Lösung des Problems in der schon von Zgusta (1951) und Szemerényi (1967) vorgeschlagenen Richtung suchen und sich auf nur einen idg. Laryngal, der nichts mit Vokalfärbung zu tun hat, beschränken und diesen einen Laryngal eben nur da ansetzen, wo er im Hetitischen als ḫ belegt ist; dies zumindest für diejenige Phase des Indogermanischen, die der Ausgliederung des Anatolischen unmittelbar vorangeht."

<sup>29</sup> In ZGUSTA's pivotal formulation (1951) a system with a single, phonetically undefined 'laryngeal' PIE \*H, three distinct vowels PIE \*a ≠ \*e ≠ \*o, and the compensatory lengthening rules \*aH → ā, \*eH → ē, \*oH → ō was introduced.

<sup>30</sup> See ZGUSTA (1951: 472): "Il y avait seulement un H. Il n'avait rien de commun avec la qualité des voyelles."

in the series Th = T+h (tenues aspiratae) and Dh = D+h (mediae aspiratae).<sup>31</sup>

4.2.2 Expressing his doubts regarding compensatory lengthening,<sup>32</sup> SZEMERÉNYI (1967: 96-7) postulated original long vowels PIE \*ā ē ō, thus expanding the proto-vowel system to contain practically the entire inventory of BRUGMANN and OSTHOFF, Neogr. \*a e o ā ē ō ə (ǎ).<sup>33</sup>

4.2.3 According to SZEMERÉNYI, PIE \*h is only to be reconstructed when Hittite (and by extension any Old Anatolian language) has Hitt. *h*. Otherwise no laryngeals (including especially \*h<sub>1</sub> and \*h<sub>3</sub>) are to be reconstructed.<sup>34</sup>

4.2.4 In addition, SZEMERÉNYI explicitly rejected the alleged PIE root shape CeC·(C) calling the inferences based upon this ‘not binding’ and due to MØLLER’s quasi-Semitic typology, not fully reflecting the PIE realities.<sup>35</sup>

4.2.5 SZEMERÉNYI implicitly but effectively returned to the traditional empirical mode of inference, according to which the postulated phonemes and their features have to be based on measurable features of the data instead of an external typology containing elements not implied by the data and therefore resulting in unsolvable inconsistencies.

4.2.6 ZGUSTA’s and SZEMERÉNYI’s views have subsequently been accepted by a range of scholars, including prominent Anatolian linguists like Johann TISCHLER (1977-2016, 1980), Roberto GUSMANI (1979), and Emmanuel LAROCHE (1986), as well as Indo-European linguists such as Thomas BURROW (1979: vi) and Elmar SEEBOLD (1988). Most recently, arguments in favour of monolaryngealism have been brought forth by Jouna PYYSALO (2013, 2016) and Joseph VOYLES and Charles BARRACK (2015).<sup>36</sup>

4.3 SZEMERÉNYI’s abandonment of the morphology CeC·C and the laryngeals \*h<sub>1</sub> and \*h<sub>3</sub> solves the self-inflicted problems of the laryngeal theory and restores a meaningful (non-ambiguous and data-based) reconstruction.

<sup>31</sup> See especially SZEMERÉNYI (1996: 140): “We know, moreover, that, as R. Jakobson formulated it, ‘languages which have the pairs voiced–voiceless, aspirated–unaspirated also have the phoneme /h/. It seems to follow from this that the laryngeal which we have just accepted was none other than *h*, the normal glottal spirant. With its *h* the IE system was similar to that of Latin.” For further arguments and discussion, see SPIE §4.9.3.4.

<sup>32</sup> SZEMERÉNYI (1996: 137): “It is just as questionable whether all long vowels are to be derived from combinations of short vowel with laryngeal.”

<sup>33</sup> The only one of BRUGMANN’s vowels not reconstructed by SZEMERÉNYI is Neogr. \*ǎ, a short /o/-quality vowel (contrasting with BRUGMANN’s ‘half-long’ Neogr. \*o) that did not cause lengthening in Indo-Iranian open syllables.

<sup>34</sup> SZEMERÉNYI (1970<sup>1</sup>: 131 = 1990<sup>4</sup>: 147): “Ein heth. *es-* ‘sein’ (...) beweist also ein idg. \**es-* (...) ohne Laryngal, ein heth. *henkan* ‘Schicksal, Pest’ ein idg. *Henk-* mit Laryngal.”

<sup>35</sup> SZEMERÉNYI (1967: 92-93): “[...] there is no intrinsic reason why we should attempt to reduce all IE ‘roots’ to a single tri-phonemic pattern of the CVC-type [...]. On the contrary, it is clear that such notions were due to a double influence from Semitic linguistics: (a) in Semitic all words begin with a consonant; (b) in Semitic the general root-shape is tri-radical. But, of course neither feature is binding for IE.” To this we would like to add that the problem here is not as much in the Semitic origin of the laryngeal theory as in the postulation of a typology not matching the data. This was also the case with the Paleogrammarian Sanskrito-centric typology: Once an unwarranted typology of any origin is allowed to decide the reconstruction instead of the data itself, an inconsistency results.

<sup>36</sup> VOYLES and BARRACK (2015: 41, 43): “Laryngealism has been posited solely on the basis of a purely formal and nonempirical axiomatic. [...] As such, it is simply not in the same league as genuine scientific theories.”



(a) SZEMERÉNYI's observation that Hitt.  $\text{ḫ}$  always reflects PIE  $*h$  ( $\approx *h_2$ ) in all positions effectively removes the synthetic ambiguity caused by the erroneously postulated  $*h_3$ .

(b) The reconstruction of the Old Anatolian initial is simplified into Hitt.  $a-$  = SZ  $*o-$  V  $*a-$ . Unlike in the laryngeal theories this ambiguity is organic, i.e. caused by the data itself (the merger of  $*o$ ,  $a \rightarrow$  Hitt.  $a$ ), not by factors transcending the material such as the laryngeals  $*h_1$  and  $*h_3$ .

(c) In the absence of the colouring effect of  $*h$ , SZEMERÉNYI, unlike the laryngeal theory, has no problem explaining the absence of 'a-colouring' in the examples with Hitt.  $\text{ḫe eḫ}$ .

Despite its advantages SZEMERÉNYI's classical monolaryngealism has issues that need to be solved:

4.3.1 The most urgent problem of monolaryngealism is the absence of colouring from PIE  $*h$  = IPA /h/. The absence of the colouring effect explains the lack of 'a-colouring' in Hitt.  $\text{ḫe eḫ}$ , averts the abyss of ambiguity of the hybrid models, and is phonetically and phonologically realistic, but comes at the cost of the loss of an explanation for the correlation between OAnat.  $\text{ḫ}$  and the IE 'a-vocalism' (Neogr.  $*\text{ə}$  a  $\bar{a}$ ).<sup>37</sup> Denying this correlation would contradict the main bulk of data, in which the related correspondences speak in favour of such a connection.<sup>38</sup> Although the colouring rule (or allophony) of  $*h_2$  of the classical laryngeal theory is overstated, neglecting the existing phenomenon would mark a step backwards.<sup>39</sup> The original view of de SAUSSURE and MØLLER, generally accepted in the classical laryngeal theory, still remains the best explanation.

4.3.2 If SZEMERÉNYI's formulation is taken literally,  $*h$  can only be postulated on the basis of OAnat.  $\text{ḫ}$ . This view certainly holds water if it is to be understood as criticism of postulating 'laryngeals' for words whose Old Anatolian counterparts lack  $\text{ḫ}$ . However, the interpretation – whether reflecting SZEMERÉNYI's view or not – that PIE  $*h$  can only be reconstructed on the basis of Old Anatolian cognates is certainly overstated, because numerous indirect features in the other IE languages, such as the hiatus required by the Vedic meter and the IE 'a-vocalism', correlate with PIE  $*h$  and justify its postulation. In this regard classical monolaryngealism is outdated, and scholars are advised to note additional justifications for the postulation of PIE  $*h$ .<sup>40</sup>

4.3.3 SZEMERÉNYI (1996: 84-87) improved the description of the PIE ablaut through

<sup>37</sup> In this connection it is worth noting that SZEMERÉNYI's (1970<sup>1</sup>: 131) comment seemingly does not exclude two laryngeals: "Ein heth. *es-* 'sein' (...) beweist also ein idg. *\*es-* (...) ohne Laryngal, ein heth. *henkan* 'Schicksal, Pest' ein idg. *Henk-* mit Laryngal." As this passage is left untouched in 1990<sup>4</sup>: 147, the distinction between PIE  $*h$  and PIE  $*H$  might not be just a lapsus.

<sup>38</sup> The correlation is actually so strong that – as correctly recognized many supporters and developers of the laryngeal theory – the problem is not the presence of 'a-vocalism' (Neogr.  $*\text{ə}$  a  $\bar{a}$ ) in the environment of OAnat.  $\text{ḫ}$ , but its absence in certain examples in which IE /e/ and/or /ē/ appear adjacent to PIE  $*h$ .

<sup>39</sup> In the CLT the laryngeal  $*h_2$  colours in both directions (i.e.  $*eh_2 \rightarrow ah_2$  and  $*h_2e \rightarrow h_2a$ ). This is not perfectly compatible with the data, where examples of absence of 'a-colouring' are present in Hittite, as already pointed out by SZEMERÉNYI (1970: 146-47): "Aber nicht einmal das würde genügen, denn es gibt auch Fälle, in denen *h* nach einem *e* erscheint, also nicht *H*<sub>1</sub> sein kann. Zum Beispiel *mehur* 'Zeit' (s. oben)."

<sup>40</sup> A recent catalogue of a dozen measurable features of the Indo-European languages justifying the reconstruction of PIE  $*h$  is now available in SPIE §4.9.3.

defining the core pattern as PIE  $*\bar{e} : e : \emptyset : o : \bar{o}$ . Despite this the treatment of the IE ‘a-vocalism’ remains inconclusive (and unsatisfactory) as the theory tends to postulate Neogr.  $*\bar{a}$  at face value in cases in which Neogr.  $*o$   $\bar{o}$  would not only be equally possible, but actually correct.<sup>41</sup> This reflects the merger of the vowels Neogr.  $*o/a$  and Neogr.  $*\bar{o}/\bar{a}$  in certain languages, including Hitt.  $a/\bar{a}$ , but also the difficulty caused by the absence of a precise explanation regarding the ‘a-vocalism’ and its relation to PIE  $*h$ .<sup>42</sup>

## 5. Results and Conclusions

5.0 The current situation of classical monolaryngealism (SZEMERÉNYI) can be summarized as follows:

5.1 SZEMERÉNYI’s theory outperforms the competitors, the hybrid models of trilaryngealism, with regard to efficiency in solving the relevant problems. Lacking the laryngeals  $*h_1$   $h_3$  and the typology CeC·(C), SZEMERÉNYI’s theory is a secure reconstructive option – and indeed the only one remaining. As an integral part of the Indo-Europeanist tradition it offers an honourable exit from the cul-de-sac of the laryngeal theory, whence its adoption is highly recommended.

5.2 Before the theory can be fully endorsed, however, it has to be developed in order to eliminate its remaining problems, all of which emerge from a single source: the absence of an explanation for the correlation between Hitt.  $h$  and the IE ‘a-vocalism’. An assumption of a colouring rule (or allophony) for PIE  $*h$  similar to that of the laryngeal theory could only be a temporary measure, because it is overstated: In its current form – including the alleged restriction of *Lex Eichner* – the rule does not allow the actually attested vowel IE /e/ (and IE /ē/) adjacent to PIE  $*h$  ( $\approx *h_2$ ).<sup>43</sup>

5.3 On a more general level, classical monolaryngealism has to present a functional model completely explaining the IE vowel patterns, their PIE origin and the relation of both to PIE  $*h$ . This alone can provide SZEMERÉNYI’s early model with a competitive edge in the reconstruction and turn it into a comprehensive Proto-Indo-European theory.

5.4 Due to its contributions both to the theory (SZEMERÉNYI 1967, 1970, 1996) and the data (TISCHLER 1977-2016), monolaryngealism offers a more advanced theory and clearly superior framework for the reconstruction of PIE. Let us recapitulate the principal advantages of this framework:

- (a) It corresponds to the actually recorded data in that it reconstructs a single

<sup>41</sup> For a partial explanation of this state of affairs, see EICHNER (1988: 128): “Er [= der Monolaryngalismus] bildet im Grunde die Fortsetzung der Brugmannischen Auffassungen vermehrt um die Ansicht, daß man nach der Entdeckung der anatolischen Evidenz nicht mehr ganz ohne Laryngal auskommt.”

<sup>42</sup> Thus, for instance, for Hitt. *adeš-* (n.) ‘Axt, Beil’ (HEG A: 94) : OEng. *adesa-n-* (m.) ‘addice, adze, ascia’ (ASaxD. 7) either SZ  $*adhes-$  or SZ  $*odhes-$  can be reconstructed. Although simpler and preferable to the permanently unsolvable equation LT  $*h_3edhes-$   $*h_1odhes-$   $*h_1adhes-$  (to which one could add LT  $*h_3odhes-$  and LT  $*h_3adhes-$ ), the ambiguity between SZ  $*a/o$  is a feature of classical monolaryngealism resulting from the absence of a connection between Hitt.  $h$  and the IE ‘a-vocalism’ not present in the CLT.

<sup>43</sup> For IE /e/ adjacent to PIE  $*h$ , unexplained regardless of *Lex Eichner*, see e.g. Gr.  $\epsilon\sigma\theta\lambda\acute{o}-$  (a.) ‘tüchtig, brav, edel’ (GEW 1: 574): Hitt. *ḫašteli-* (c.) ‘Held’ (HIL. 379, *ḫa-aš-te-li-ia-an*).

laryngeal segment only when the latter is empirically attested (in Anatolian) or can be inferred from other unambiguous traces;

(b) It allows PIE to be viewed as a natural language with a phoneme paradigm and phonotactic patterns compatible with those actually observed in the IE descendant languages;

(c) It takes the morphophonemic alternations of the protolanguage as what they are and does not try to explain their background at the level of a pre-*proto-language* with the method of internal reconstruction;

(d) It avoids making unverified hypotheses concerning typological parallels, genetic connections, or areal contacts with other language families (particularly Semitic, but also Uralic).<sup>44</sup>

5.5 Even so, in order to present a complete reconstruction model, monolaryngealism has to adopt certain ideas of the laryngeal theory – and vice versa. Such a proposal, a synthesis of the consistent features of both theories, already exists in the form of the glottal fricative theory (PYYSALO 2013) and its digitized version, PIE Lexicon,<sup>45</sup> which will be discussed separately in a sequel to the present paper (PYYSALO 2018, forthcoming). In the latter a new starting point, leading to what is hoped to be a reunification of the divided field of Indo-European linguistics, will be outlined.

## Abbreviations

a.	– adjective
ALiEtWb.	– HOCK et al. 2015
aLT	– *a-hybrid laryngeal theory
Arm.	– Armenian
ASaxD.	– BOSWORTH & TOLLER 1882-98
Att.	– Attic Greek
C	– consonant
c.	– genus commune
CHLu.	– HAWKINS 2000
CLT	– classical laryngeal theory
CLu.	– Cuneiform Luwian
eLT	– *e-hybrid laryngeal theory
EtDiPC	– MATASOVIĆ 2009
f.	– feminine
GEW	– FRISK 1960-1972
Gr.	– Greek
HEG	– TISCHLER 1977-2016
Hes.	– Hesychius
HHand.	– TISCHLER 2001
HIL	– KLOEKHORST 2007
Hitt.	– Hittite
HLu.	– Hieroglyphic Luwian
IE	– Indo-European
IEW	– POKORNY 1959
LEIA	– VENDRYES, BACHELLERY & LAMBERT 1959ff.

<sup>44</sup> A number of Indo-Uralic lexical comparisons (alleged loanwords and/or possible early cognates) based on the trilaryngealist reconstruction of PIE were made by Jorma KOIVULEHTO (1991). These comparisons may now be dismissed as incompatible with the current state of knowledge concerning the early stages of both Uralic and Indo-European.

<sup>45</sup> For the digitized glottal fricative theory (GFT) see PIE Lexicon at <http://pielexicon.hum.helsinki.fi>.

LiEtWb.	– Fraenkel 1962-1965
Lith.	– Lithuanian
LIV	– RIX 1998
LIV <sup>2</sup>	– RIX & KÜMMEL 2001
LSJ.	– LIDDELL & SCOTT 1940
LT	– laryngeal theory
m.	– masculine
MidIr.	– Middle Irish
n.	– neuter
Neogr.	– Neogrammarian
OAnat.	– Old Anatolian
OEng.	– Old English
OLith.	– Old Lithuanian
oLT	– *o-hybrid laryngeal theory
Pal.	– Palaic
PIE	– Proto-Indo-European
sb.	– substantive noun
SPIE	– PYYSALO 2013
SZ	– SZEMERÉNYI(?’s reconstruction)

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